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Effects of the Mobile Self-managed Quiz on English Vocabulary Learning of College Students

Il-Sun Hyun
(Hansung University)

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Self-management skill can be a key factor to successful English learning, but few opportunities are available for Korean college students. In response to the lack of students' self-management in learning English, this study aimed to explore to what extent the mobile-assisted self-managed quiz affects college students' vocabulary learning among 80 EFL students. The students of the intermediate (n = 40) and the novice group (n = 40) participated in taking two quiz modes: the half of each level was assigned to either a self-managed quiz or an in-class quiz. Comparisons were made on the six test scores by independent samples t-test and the students' opinion was analyzed. The results showed intermediate students taking the self-managed quiz scored higher than those of the in-class on the achievement test at a significant level. No difference was found in the quiz scores among the students at either proficiency level. The results imply that students' proficiency could be a critical predictor to the achievement of vocabulary. Nevertheless, most students showed a positive attitude toward the self-managed quiz in a formal classroom. The findings suggest that university students in an EFL class need more opportunities to build autonomy through self-evaluation activities in a formal classroom.

[self-regulation/self-managed quiz/vocabulary learning/mobile quiz]

I. INTRODUCTION

Vocabulary learning is essential to foreign language learners. When language learners consider learning foreign languages, acquiring and mastering of target language vocabulary is considered as the first step. For this reason, foreign language learners are expected to have a certain level of motivation to build up vocabularies until they could utilize them without many difficulties. As a method of learning vocabularies, a self-

managed or a self-regulated approach has been discussed much. For example, it has been reported that learners engaged in using dictionaries, memorizing lists of words, utilizing contexts and mental images (O' Malley, & Chamot, 1990; Oxford, 1990; Wenden, & Rubin, 1987; recited from, Sanaoui, 1995). Regardless of the methods which the students utilize, learners' engagement can lead to successful learning. Recent researchers also have supported that language learners' autonomy could be a key factor in developing vocabulary skills (Hu & Zhang, 2017; Kristmanson, Lafargue, & Culligan, 2013; Tuan, 2011).

Fostering the autonomy in vocabulary learning with an explicit instruction appears to be essential to Korean college students. Indeed, Korean students have been taught about reading skills while preparing for the Korean National Examination. The washback effect of the National test emphasizes Korean students to read and to develop reading strategies and to acquire vocabularies, depending on memorization rather than strategies use of vocabulary learning. For this reason, most college students are neither accustomed to building self-management in learning English nor to developing strategies of vocabulary learning. Benson (2001) argues that self-management of foreign language plays a critical role in achieving proficiency through different learning modes.

The implementing the self-managed quiz on mobile phones can contribute to training college students to be autonomous learners. With the help of characteristics of mobile-assisted learning such as mobility, personalized learning, portability and ubiquity, the self-managed vocabulary quiz can be easier to take in- and out- of the classroom. Utilizing mobile-phones, students can access the quiz whenever they want to take. The positive effects of the mobile-based vocabulary learning have been reported in a substantial number of studies (Choi & Jeong, 2010; Chun, 2013; Kennedy & Levy, 2008; Lu, 2008; Thornton, & Houser, 2005). Moreover, different educational software is utilized via mobile phones. For example, games (Park & Shin, 2014), and educational apps (Deng & Shao, 2011; Godwin-Jones, 2011) were adopted to build vocabulary knowledge of L2 learners. Deng and Shao (2011) found positive effects of a self-directed approach through mobile phones on L2 learners' vocabulary acquisition. Kondo et al. (2012) also found that a mobile-assisted teaching contributed to a self-study among Japanese college students.

Although there has been much research on the self-directed vocabulary learning, few have attempted to employ a self-managed vocabulary quiz to examine the developmental process of L2 learners. Previous studies were limited to investigate self-management skills related to other skills such as reading, speaking, listening and writing (Ross, 1998). Very little has been known about the development of vocabulary knowledge among L2 learners with empirical evidence. To fill the gap of the previous studies, the present study implemented the self-managed quiz on mobile phones to explore how the self-managed quiz affects college students' vocabulary achievement and to suggest the self-managed quiz as an activity to nurture college students as autonomous language learners. The

present study aimed to suggest learners and teachers a meaningful pedagogical activity to help autonomy in acquiring L2 vocabulary. Three research questions were formulated as follows.

1. To what extent does a self-managed quiz affect the quiz scores?
2. To what extent does a self-managed quiz affect the achievement test scores?
3. What are the students' opinions about the self-managed quiz?

II. LITERATURE

1. Mobile-Assisted Vocabulary Learning and Assessment

Teaching vocabulary has previously been considered relatively less important than other second language skills. It has been known that there is a close connection between grammar and vocabulary, postulating the need for vocabulary instruction in L2 reading context. Accordingly, current approaches on L2 vocabulary teaching methods vary from teaching frequently used words to extensive reading programs (Hwang & Nation, 1989; Milton & Meara, 1995; Nation & Waring, 1997). Researchers, however, have agreed upon the necessity of vocabulary teaching method in both explicit and implicit ways in L2 context (Hinkel, 2002; Laufer, 1997; Lewis, 1997; Nation, 2005).

There have been growing needs for more efficient and innovative approaches for teaching and testing L2 learners' vocabulary. Specifically, mobile-assisted vocabulary learning has become a prevalent approach in L2 context. Researchers have explored the positive effects of mobile phone assisted vocabulary learning (Choi & Jeong, 2010; Kennedy & Levy, 2008; Lu, 2008; Thornton & Houser, 2005). For example, positive effects of the use of games (Park & Shin, 2014) and apps (Deng & Shao, 2011; Godwin-Jones, 2011) have been reported. Moreover, a mobile-assisted approach has contributed to developing various testing methods for L2 vocabulary assessment. Foreign language learning and teaching has coalesced into smartphone-based approaches and provided test-takers with better language learning and testing environment. Levy (1991) and Lu (2008) agree the small size of the smart phones is suitable for presenting vocabulary test items, compared to items for reading or writing tests. In addition, both learners and teachers can track language performance on the tests through apps (e.g. *GuessIt!, Socrative*). Godwin-Jones (2011) argues that learners can choose apps to their specific learning goals to help develop their autonomy.

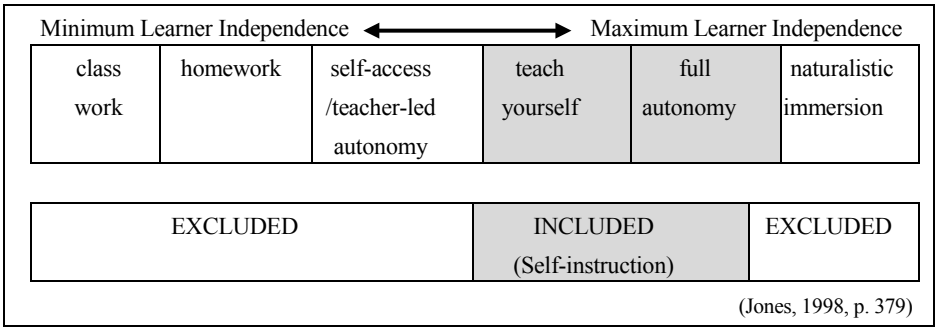
Meanwhile only a few researchers have explored effects of smartphone use on the L2 learners' test performance (Gordon, 2015; Park & Shin, 2014; Whattananarong, 2004). Previous studies have mainly focused on the comparability of testing methods rather than

on the investigation of the effects of smartphone use on the process of the testing performance. For example, studies have been conducted on the smartphone-based tests in comparison with test scores between paper-based or traditional methods and the smartphone-based (Gordon, 2015; Whattananarong, 2004). Other studies were about the effect of a smartphone app on the quiz tests (e.g. *GuessIt*!) and the improvement of reading ability through a smartphone-based formative assessment (Heo, 2017; Palomo-Duarte et al., 2016). Nevertheless, very little has been known about effects of a smartphone-based test regarding the self-management in a formal EFL classroom.

2. Self-Management in Language Learning

Self-managed language learning has drawn its attention mostly to adult language class. Indeed, self-management skill can be found in the ideas such as self-directed naturalistic learning and self-instruction. Jones (1998) refers to the self-instruction as 'deliberate long-term learning project instigated, planned, and carried out by the learner alone without a teacher's intervention' (p. 379). According to Jones' (1998) models for Scope of Study, he included self-instruction referring to teach yourself and full autonomy. Figure 1 demonstrates a Jones' (1988) model of the Scope of Study of self-instruction.

FIGURE 1
Scope of Study of Self-instruction



(Jones, 1998, p. 379)

Figure 1 illustrates two paradigms in self-instruction: *teach yourself* and *full autonomy*. The teach yourself refers to an instruction led by a syllabus of language learning package. On the other hand, the full autonomy includes an instruction led by a learner's own syllabus without any intervention of teachers. Out of the other paradigms, self-access/teacher-led autonomy means by learners' contracting out of elements taught in a language course with teacher's assistance such as prompts or evaluation. In this sense,

those who are at a high proficiency level could fit into *teach yourself* and *full autonomy* according to Jones' (1998) model, but those who are at an intermediate and a low proficiency level may need more *self-access/teacher-led* approaches.

Prior to moving to the full autonomy paradigm, foreign language learners could practice building their self-management skill in class. Practical picture is that learners can train themselves with an activity led by a teacher to promote autonomy. Long (1983) found that self-directed naturalistic learning works for developing learners' proficiency. Others also believed that self-instruction and self-directed learning could be involved in learners' classroom-based instruction (Littlewood & Liu, 1996; Nunan, 1989, 1991).

As one of the activities, language learners can take a self-managed test for the same objectives of the self-management learning which has been similarly defined as a self-assessment. Unless foreign language learners reach a threshold level, they need assistance from teachers with prompts or evaluation suggested by Jones' model (see Figure 1). In addition, O'Malley and Chamot (1990) refer to the self-assessment as one of the metacognitive strategies, defining it as an ability to understand the conditions that help one successfully accomplish language tasks. Others have also considered it as the ability to recognize the learning conditions in which most effective learning outcome occurs (Hauck & Hurd, 2005; Rubin, 2001; White, 1995).

In order to nurture foreign language learners to be independent, pedagogical tasks should be designed for them to reach goals, monitor students' own developmental process, and evaluate their own performance. Saito (2003) claims that development-oriented self-assessment incorporates the learning process when learners' self-managed tasks are implemented, which proposes a doubt on the necessity of the implementation of self-management assessment in formal instruction. For years, researchers have questioned about the effectiveness of formal instruction in language learning (De Graaff, 1997; Ellis, 1994; Littlewood & Liu, 1996; Nunan, 1989; Pickard, 1995) and traditional teaching methods such as word repetition, and giving definition. Tuan (2011) argues that the traditional methods have revealed limitations to help language learners to be independent ones.

Likewise, college students need self-managed tasks not only for developing autonomy, but for additional practices to make up for the teacher-led instruction in a formal classroom. It appears that self-management skill is a critical key for successful language learning. Every student and teacher should recognize that how autonomy and self-management are important to language learning and vocabulary acquisition. Only a few studies, however, have explored the effects of practice self-managed activities in a formal class setting. Very little has been known the effects of self-evaluative task practice based on empirical evidence in EFL context. To meet the needs for the practice of self-managed tasks for building college students' autonomy in vocabulary learning, the present study

adopted mobile phones to administrate self-managed vocabulary quiz with the students at the two proficiency levels.

II. METHODS

1. Participants

Participants in the present study were 80 students enrolling the General English course at the intermediate (n = 40) and the novice (n = 40) proficiency level. They were majoring in Engineering and the Creativity Undeclared and Exploratory in a university in Seoul. Their ages ranged from 20 to 23. Prior to the study, half of each proficiency level was assigned to a different quiz mode group, either a self-managed quiz or an in-class quiz.

Even though their proficiency levels were predetermined by the university placement test scores, two independent samples t-test were conducted with quiz scores of the first-week quiz to assure if the students of the two testing groups (self-managed vs. in-class quiz) are homogeneous. The results of the intermediate students were presented in Table 1.

TABLE 1
Homogeneity of Intermediate Students

Quiz Mode	*N*	*M*	*SD*	*t*
Self-managed	20	13.08	6.18	
In-class	20	15.65	4.91	-.1.047

As seen in Table 1, the mean scores of the students in the self-managed quiz group were lower than those of the in-class group in relation to the intermediate proficiency level. An independent samples t-test was run to examine any statistically significant differences in the quiz scores. The results found that the intermediate students of the two testing groups are homogeneous groups (t = -1.047, df = 38, p = .302).

The independent samples t-test was conducted on the first-week quiz scores of the novice students in the two testing mode groups. The results are presented in Table 2.

TABLE 2
Homogeneity of Novice Students

Quiz Mode	*N*	*M*	*SD*	*t*
Self-managed	20	11.25	4.45	
In-class	20	12.90	2.86	-.139

As seen in Table 2, the mean scores of the two testing groups are similar, implying that the novice students of the two testing groups do not have much proficiency gap. To examine any statistically significant differences in the quiz scores, an independent samples *t*-test was run and the *t*-vale revealed that the novice students at both testing groups are homogenous (t = -.139, df = 32.39, p = .173).

In sum, the mean score and the *t*-value indicated that the students at each proficiency level were homogenous groups, meaning that the students of the two proficiency levels could be divided into two by employing two quiz modes: the self-managed and the in-class controlled. In addition, the experiments were conducted separately according to the proficiency levels of the students with the respective vocabulary lists being were different from each other.

2. Materials

1) Vocabulary Quiz

Prior to creating vocabulary quizzes, a researcher created a list of target words to be included for the vocabulary quizzes. The words were excerpted from the two course books, *Q: Skills for Success 2* (McVeigh & Bixby, 2015), and *Q: Skills for Success 3* (Ward & Gramer, 2011). The quizzes of the intermediate level contain 151 words and the same number of sentences excerpted from the course book. Regarding the quizzes of the novice level, 137 words and the same number of sentences were excerpted from the course book. Due to the different books for the different proficiency levels in this study design, the participants of the study took different quizzes. The first letters of the answers to the blanks were given to avoid possible answers (Read, 2000). The quizzes were implemented with the mobile-phone quiz application (Appendix 1).

On a mobile phone application, the students took the quizzes with a limited testing trial, one-time in the screenshot. On the screen, the students had questions containing sentences with blanks including the first letter of the answers. The students could ‘stop’, ‘save’, and ‘submit’ buttons at the bottom of the screen. A total of eight sets of quizzes were created because the courses consist of eight units at both proficiency levels. On average, the students received 16 to 18 questions in each quiz, taking the total eight sets of quizzes during the spring semester of 2018.

2) Achievement Tests

To measure the students’ achievement of the target words, two achievement tests were developed according to the students’ proficiency levels. Figure 2 presents a sample

question of the achievement test for the intermediate level.

FIGURE 2

A Sample Question of Achievement Test

7. exaggerate Meaning (Korean)_____

As seen in Figure 2, the students of the both intermediate and the novice were required to write the meaning of the given words in Korean. The test was developed into the C-test type due to its simple and easy to administrate. DÖrneyei and Katona (1992) argue that the C-test is reliable and valid instrument. Hahn (2018) reported that Korean college students perceived cloze test with a moderate degree of face validity. This indicates that Korean college students appear to be familiar with the test format and not to be affected by the test format.

In addition, a practical reason includes the fact that there were too many questions on the achievement test for the students to complete it, and the achievement test items that asked the students to write the meaning of the words in Korean were enough to gauge whether the students had acquired the words or not. To avoid guessing the meaning of the target words, the students were awarded a point only if they wrote the exact meaning of the words that they had studied in the sentences in the textbooks.

Lastly, the novice students were considered. The C-test has been known to be less frustrating (DÖrneyei & Katona, 1992). The students of the novice proficiency level had hardly understood the meaning of the words and how to use them appropriately, so the C-test was meant to be a simple method to check their overall understanding of the words.

Accordingly, the students of the intermediate and those of the novice levels took different achievement tests which include the vocabulary of the textbooks according to proficiency levels. For example, the intermediate students completed 157 questions and the novice students did 131 questions respectively.

3) Questionnaire

A follow-up questionnaire was created to explore the students' opinions about the self-managed quiz. The questionnaire was administered to those who took the self-managed quiz at the intermediate proficiency level and the novice one. The questionnaire consisted of 9 questions regarding the experience of taking the self-managed quiz. The seven were about interest, anxiety, self-regulation, English skill improvement, future use and usefulness of the quiz. The seven items were developed on 5-point Likert scales ranging

from 'strongly agree, agree, I don't know, disagree, strongly disagree.' Two questions requiring the students to write about their opinions on the advantages and the disadvantages of the self-managed quiz were included as open-ended questions.

3. The Procedure of the Self-managed Quiz

The eight quizzes were administered through the semester and the two testing modes were adopted for the students at both proficiency levels (e.g. the intermediate & the novice). The test items of the quizzes were exactly the same, but the students' access to taking the quizzes was different. Figure 3 describes the procedure of the administration of the two quiz modes: a self-managed and an in-class.

FIGURE 3

A Procedure of the Quiz Modes

Goal Setting	• A teacher articulates the target words of each unit. • Students practice the target words with reading articles and exercises.	
⬇		
Quiz Modes	Self-managed	In-class
	• Students were expected to complete the unit quizzes every two weeks without a trial and a time constraint. • The participation in taking the self-managed quiz earns 0.5 point of the total scores of the course credit.	• Students took quizzes only in class only every two-week interval. • Students have to complete the quiz within 10 minutes with a limited trial chance. The participation in taking the quizzes counts 0.5 point of the total scores of the course credit.
⬇		
Make-up Quiz	• Anyone who did not achieve up to 80% on the quizzes could take a make-up quiz themselves and they could make up their original achievement.	

As seen in Figure 3, the procedure of the quizzes includes three stages. For one, a teacher articulates the target words for the students to set goals in each unit. The students read the two articles of the course books which include the target words. Next, the students were divided into two quiz modes with different test-taking accesses. Those who took the self-managed quizzes were expected to complete them on a two-week basis without a teacher's supervision. They took the quizzes without time or space constraints, but they were required to submit within in a week to prevent the students from delaying the quizzes. On the other hand, the students taking the quizzes in the class hour had a limited trial and a time allotment, 10 minutes. The students of the both testing groups gained 0.5 point for the

participation of taking the quizzes.

Lastly, the students who did not achieve more than 80% on each quiz could take make-up tests, so that they could sustain their motivation to monitor and take the quizzes themselves. In this way, the students had another chance for gaining the quiz scores up to 80%, feeling satisfied with their achievement.

IV. RESULTS AND DISCUSSION

An independent samples *t*-test was computed to explore any differences in quiz scores between two test modes at a statistically significant level. Six independent samples *t*-tests were run to compare the six quiz scores.

1. Comparison of Quiz Scores of Weeks

Six independent samples *t*-tests were run to explore statistically significant differences in quiz scores obtained over 12 weeks. The independent samples *t*-tests were separately conducted according to the students' proficiency levels. The results are presented in Table 3.

TABLE 3
Analysis of the Quiz Scores of the Two Quiz Modes

Time	Proficiency	Quiz Mode	*M*	*Std.*	*t*
week 2	Intermediate	Self-managed	14.62	6.41	-2.958*
		In-class	18.87	.31	
	Novice	Self-managed	12.35	.58	-3.339*
		In-class	17.20	6.46	
week 4	Intermediate	Self-managed	16.05	3.67	-3.423*
		In-class	18.87	.31	
	Novice	Self-managed	13.20	1.15	.372
		In-class	12.90	3.41	
week 6	Intermediate	Self-managed	17.75	4.21	.105
		In-class	17.65	.13	
	Novice	Self-managed	15.30	.65	.946
		In-class	15.00	1.25	

week 8	Intermediate	Self-managed	17.80	4.21	.886
		In-class	16.50	5.03	
	Novice	Self-managed	17.85	.36	1.208
		In-class	17.35	1.81	
week 10	Intermediate	Self-managed	15.80	3.76	-1.697
		In-class	17.55	2.66	
	Novice	Self-managed	19.90	.30	1.639
		In-class	18.30	4.35	
week 12	Intermediate	Self-managed	18.95	4.46	2.831
		In-class	15.10	4.12	
	Novice	Self-managed	17.10	5.84	-.364
		In-class	17.65	3.39	

*$p < .05$

As seen in Table 3, statistically significant differences exist in the quiz scores between the two quiz modes at the beginning weeks of the semester such as week 2 and week 3 among the intermediate and novice students. These differences, however, disappeared for the rest of the weeks. These findings revealed that either quiz modes did not bring any differences to the quiz scores regardless of the students' proficiency levels.

Moreover, the above results indicate that both quiz modes, the self-managed and the in-class controlled, and the proficiency of the students are not the sole predictors for the successful learning of target vocabulary. Other factors such as motivation, and memory capacity could explain the findings of the results.

2. Comparison of Achievement Test Scores

Two independent samples *t*-tests were performed to examine the effects of the self-managed quiz on the achievement test scores among the intermediate and novice students respectively. The results are presented in Table 4.

TABLE 4
Effects of Self-managed Quiz on the Achievement Test Scores

Proficiency Level	Quiz Mode	*M*	*SD*	*t*
Intermediate	Self-managed	129.05	17.33	2.282 *
	In-class	112.40	27.65	
Novice	Self-managed	113.55	21.19	-.198
	In-class	114.95	23.45	

*$p < .05$

As seen in Table 4, the intermediate students taking the self-managed quiz scored higher than those taking the in-class quiz on the achievement test. There was a statistically significant difference in the achievement test scores between the intermediate students of the two testing modes (t = 2.282, df = 31.93, p = .029). Regarding the novice students taking the in-class quiz achieved higher scores than those taking the self-managed quiz on the achievement test scores. There was no statistically significant difference in the achievement test scores between the novice students of the two testing modes (t = -.198, df = 38, p = .844).

The findings of the achievement test scores revealed that the proficiency level of the students affected the students' vocabulary achievement between the two quiz modes. This explains that the intermediate level students could have a higher motivation than those of the novice level. To implement the self-managed quiz in an EFL class, the students should have reached the intermediate level at least. On the bright side, the results shown in table 4 suggest that the students build self-management with their own learning through the implementation of the self-managed quiz.

3. Opinions on the Self-managed Quiz

A follow-up questionnaire was conducted to ask the opinion about students' experience of taking the self-managed quiz. The questionnaire was thus conducted with the only students who participated in the self-managed quiz group at the intermediate (n = 20) and the novice proficiency (n = 20). Out of the 40, 37 participated in the questionnaire.

Prior to analyzing the responses through frequency analysis, a Cronbach's alpha test was run on the responses of the closed-ended questions to determine the reliability of the questionnaire. The value of the Cronbach's alpha test was .923, which indicates a high level of reliability. The results are presented in Table 5.

TABLE 5
Descriptive Statistics of Responses

Questions	*M*	*SD*
1. Did you enjoy taking the self-managed quiz on a mobile phone?	4.13	.14
2. Do you agree with that the self-managed quiz reduced the test anxiety?	3.52	.22
3. Does the experience of taking the self-managed quiz help you build self-regulation?	3.63	.19
4. Do you feel that your English skill has improved by taking the self-managed quiz?	3.69	.16
5. Would you like to continue using the self-managed quiz?	3.88	.20

6. Do you agree that the self-managed quiz evaluates your vocabulary skill?	3.72	.18
7. Do you agree with the scores of the self-managed quiz should be accounted for the course credits?	3.75	.20

As seen in Table 5, the mean of the Likert scale scores on the enjoyment of taking the self-managed quiz on a mobile-phone was the highest (M = 4.13) with the second highest score of the future use of the self-managed quiz (M = 3.88). These findings are pedagogically meaningful to EFL classrooms. The potential use of the self-managed or self-administered quiz could be useful to make up the lack of class time for teaching vocabulary. With similar scores, the students believed that the self-managed quiz a valid instrument to measure their vocabulary skill (M = 3.72), and they agree with including the scores for their course credits (M = 3.75). These findings imply that students perceive the self-managed test can be useful and reliable to measure their vocabulary achievement. Remarkable findings were about the responses to the agreement with that the students felt their self-regulation (M = 3.36) and vocabulary skills (M = 3.69) has improved through the self-managed quiz practice. These findings support the importance of practicing autonomous learning and self-directed evaluation (Blanche, 1988).

In short, the findings shown in Table 5 explain that the students' vocabulary learning had been positively affected the students' vocabulary learning through the practice of the self-managed quiz on mobile phones in terms of having fun, reduced test anxiety, building self-regulation, and English. Overall, it appears to be possible for the students to continue utilizing the self-managed quiz through phones both for evaluating their vocabulary skill and also counting for course credit.

To further explore the students' attitude and awareness of the practice of the self-managed quiz, the responses on the questionnaire about the advantages and the disadvantages of the self-managed quiz were analyzed. The results of the analysis on the responses to the advantages are presented in Table 6.

TABLE 6
Advantages of the Self-managed Quiz

Category	*N*	%	Sample Responses
No constraints			
1) space	5	13.51	"I can take the test at home." "I can take the test anywhere."
2) time	6	16.22	"I can take the test whenever I want to." "I can take the test without time constraints."

Preparation			
	1	2.70	"I had enough time to prepare for the study."
Usefulness			
1) convenience	10	27.03	"It's simple to take the test on the phone."
2) saving class hour	2	5.41	"We can do more in class." "We can save class hour due to self-assessment."
3) less spell error	1	2.70	"I should do double-check for the spell.", "I try not to write the wrong spell."
4) better concentration	1	2.70	"I can concentrate more on the test."
5) better memorization	1	2.70	"I can easily memorize the words."
6) improved typing speed	1	2.70	"My English typing speed has been improved a lot."
Self-regulation	3	8.11	"I am aware of the self-regulation for the study.","I self-regulate the study."
Affective factors			
1) motivation	5	13.51	"I became interested in studying English words.", "Mobile self-assessment encourages me to study more with the vocabulary."
2) lower test pressure	1	2.70	"I felt less pressure when taking the test on the phone."
Total	37	100.0	

As seen in Table 6, most students remarked on the "convenience" (27.03%), followed by "no constraints of time" (16.22%) and "space" (13.51%). The students commented on an affective factor such as "motivation" (13.51%), which could make them encourage study more. This is in line with the remarks on the "self-regulation" (8.11%). Other remarks include "saving class hour" (5.41%).

The responses on the advantages of the self-managed quiz included four categories: no constraints, usefulness, preparation, and affective factors. Out of the four, 'convenience' with not constraints of time and space has been much discussed in existing studies (Heo, 2017; Park & Shin, 2014; Thornton & Houser, 2005; Whattananarong, 2004). Moreover, the remark on the self-regulation is noteworthy. It seems certain that the self-managed quiz represents a complex process, but the self-assessment in class could enhance the students' language learning (Saito, 2003). Another open-ended questionnaire item was conducted to ask the students about the disadvantages of the self-managed quiz. Three students did not

write any and the results of the analysis on them are presented in Table 7.

As seen in Table 7, the main comments on the disadvantages of the self-managed quiz vary. One of the most cited concerns was about "cheating" (27.03%) followed by "procrastination in taking the quizzes" (29.73%). Other issues were about the "a lack of self-management skill" (8.11%), "inefficiency" (5.41%).

TABLE 7
Disadvantages of the Self-managed Quiz

Category	*N*	*%*	Sample Responses
Management			
1) self-management	3	8.11	"I forgot taking the quizzes", "I did not regulate my quiz test schedules."
2) procrastination	11	29.73	"I delay the time to take the quizzes and missed a lot.", "I was not willing to take the quizzes."
Unfairness			
1) cheating	10	27.03	"It is easy to cheat."
2) unfamiliarity	6	16.22	"The mobile phone screen is too small to take the quiz."
Achievement			
1) forgetting	1	2.70	"I kept forgetting the words."
2) inefficiency	2	5.41	"I don't feel that my vocabulary has been improved."
3) less satisfaction	1	2.70	"I felt less satisfied with studying words on mobile-phones, compared to paper-based tests."
No responses	3	8.11	
Total	37	100.0	

Regarding the disadvantages of the self-managed quiz, the students were concerned about cheating. There seemed to be a critical issue in terms of the evaluation. When the students consider quizzes as an evaluation, the results of the quiz need careful consideration. One of the suggested solutions is that the self-managed quiz can be used for the self-evaluation tools and teachers should place importance on the students' active participation, not on the number of corrected answers.

V. CONCLUSION

The present study examined the effects of a self-managed quiz on the vocabulary learning of 80 college students who participated in two quiz modes: a self-managed and an in-class quiz. Several *t*-tests were run to analyze the six quiz scores, the achievement test

scores and a frequency was calculated on the responses of the questionnaire. The results found that there were a few statistically differences in quiz scores during the initial weeks, but the difference disappeared. For example, during the week 2 and week 3, the difference in the scores among intermediate and the novice students disappeared as time passed.

The abovementioned findings suggested that the effects of the self-managed quiz were affected by the proficiency level of the students, indicating that the intermediate level students could achieve higher scores than those of the students at the novice proficiency level. However, the novice group students had no difference in their achievement test scores regardless of the test types. Again, these findings explain that the proficiency level could be a main factor for language learning when students take the self-managed quiz in the EFL context. This is partially consistent with Reeves (1993) who found that teach-yourself (i.e., high-autonomous) contributed to the highest proficiency gains comparing to distance and classroom methods using the same materials. The results could be explained by the model of Jones (1998). According to his model, this study included the in-class quiz type controlled by a teacher, and 'teacher-led autonomy' could be appropriate the students who are at the low proficiency levels.

The findings of the present study have pedagogical implications. First, teachers should consider carefully before introducing the self-managed quiz in a formal setting. Any students with low proficiency need a certain degree of teacher-led control until they acquire self-management skill. Similarly, Jones (1994) reports that Hungarian at lower proficiency levels had difficulties with learning through teach-yourself at first, but it became easier and more motivating once he had passed a key intermediate-level threshold. Guidance from a teacher can encourage students to reach the level of taking quiz with autonomy. Park and Shin (2014) point out that a teacher's intervention is needed when students are at a low proficiency level.

Next, the students' positive attitude toward the self-managed quiz and their expectation in improving the self-regulation and English skill should not neglected. Although there remain the concerns about unfairness and how to perform the self-managed quiz, the students could gain advantages such as self-regulation. Saito (2003) agrees with that the self-assessment could enhance students' learning and help teachers to measure students' progress. Recently, Ko (2018) also reports that Korean EFL learners could build autonomy through self-directed practice.

Some suggestions were made concerning the implementation of the self-managed quiz. First, the purpose of the quiz should be focused on the training students in self-regulation and the self-evaluation. In the responses to the questionnaire, the pedagogically meaningful remarks were about "self-regulation". In addition, the students were concerned about cheating, which causes unfairness. Thus, the students' participation in taking the quiz should be given considerable weighting. Oskarsson (1984) suggests relevant training in

self-observation and self-assessment when to build self-regulation. Moreover, the practice of the self-managed quiz can be incorporated with the learner-centered approach which is a method of second language self-assessment that builds student independent learning (Bachman, 2000).

The present study, however, has several limitations to generalize findings. Affective factors such as motivation, confidence and self-esteem were not controlled. Dörneyei (1990) has argued that adult language learners have integrative motivation with multi-facets for language skills. Gardner, Masgoret, Tennant, and Mihic (2004) found that both instrumental and integrative motivation interplayed among university students in a French class.

In conclusion, there are some potential benefits from use of the self-managed quiz. Most importantly, the self-managed quiz could lead to improving students' vocabulary. Moreover, the self-managed quiz could help foreign language learners to build autonomy. Although a threshold level, the intermediate proficiency, could be a prerequisite when adopting the self-managed quiz, the procedure of the self-managed quiz could certainly provide students a learning environment where they have opportunities to evaluate their own learning without much stress.

REFERENCES

Bachman, L. F. (2000). Learner-directed assessment in ESL. In G. Ekbatani & H. Pierson (Eds.), *Learner-directed assessment in ESL* (pp. ix-xii). NJ: Lawrence Erlbaum Associates, Inc.

Benson, P. (2001). *Teaching and researching autonomy in language learning*. Harlow, U.K.: Routledge.

Blanche, P. (1988). Self-assessment of foreign language skills: Implication teachers and researchers. *RELC Journal, 19*(1), 75-93.

Choi, E-J., & Jeong, D-B. (2010). The effects of college students' vocabulary learning by using mobile LMS lessons. *Multimedia Assisted Language Learning,13*(3), 279-302.

Chun, L. (2013). A framework for developing self-directed technology use for language learning. *Language Learning & Technology, 17*(2), 100-122.

Deng, H., & Shao, Y. (2011, October). Self-directed English vocabulary learning with a mobile application in everyday context. In *10th World Conference on Mobile and Contextual Learning: mLearn 2011 Conference Proceedings* (pp. 24-31). Beijing, China. mLearn.

De Graaff, R. (1997). The esperanto experiment: Effects of explicit instruction on second

language acquisition. *Studies in Second Language Acquisition, 19*(2), 249-276.

Dörneyei, Z. (1990). Conceptualizing motivation in foreign-language learning. *Language Learning, 40*(1), 45-78.

Dörneyei, Z., & Katona, L. (1992). Validation of the C-test amongst Hungarian EFL learners. *Language Testing, 9*(2), 187-206.

Gardner, R. C., Masgoret, A. M., Tennant, J., & Mihic, L. (2004). Integrative motivation: Changes during a year-long intermediate-level language course. *Language learning, 54*(1), 1-34.

Godwin-Jones, R. (2011). Emerging technologies mobile apps for learning. *Language Learning & Technology, 15*(2), 2-11.

Gordon, A. M. (2015). *Paper based testing vs. mobile device-based testing in an EFL environment: What's the difference?* Unpublished master's thesis, St. Cloud State University, Minnesota.

Ellis, R. (1994). *The study of second language acquisition.* Oxford: Oxford University Press.

Hahn, H. R. (2018). The construct of cloze test and face validity. *English Language & Literature Teaching, 24*(4), 221-243.

Hauck, M., & Hurd, S. (2005). Exploring the link between language anxiety and learner self-management in open language learning contexts. *EUROPEAN Journal of Open, Distance and E-learning, 2005*(2), 1-23.

Hinkel, E. (2002). *Second language writers' text*. Mahwah, NJ: Lawrence Erlbaum Associates.

Heo, J. Y. (2017). *The effects of formative assessment utilizing smart-phone application on middle school students' English reading abilities and attitudes*. Unpublished master's thesis. Ewha Womans University, Seoul.

Hu, P., & Zhang, J. (2017). A pathway to learner autonomy: A self-determination theory perspective. *Asia Pacific Education Review, 18*(1), 147-157.

Hwang, K., & Nation, P. (1989). Reducing the vocabulary load and encouraging vocabulary learning through reading newspapers. *Reading in a Foreign Languages, 6*(1), 323-335.

Jones, F. R. (1994). The lone language learner: A diary study. *System, 21*(4), 453-469.

Jones, F. R. (1998). Self-instruction and success: A learner profile study. *Applied Linguistics, 19*(3), 378-406.

Kennedy, C., & Levy, M. (2008). L'italiano al telefonino: Using SMS to support beginners' language learning. *ReCALL, 20*(3), 315-330.

Ko, H. S. (2018). Self-directed learning and English proficiency by Korean learners. *English Teaching, 73*(1), 49-69.

Kondo, M., Ishikawa, Y., Smith, C., Sakamoto, K., Shimomura, H., & Wada, N. (2012).

Mobile assisted language learning in university EFL courses in Japan: Developing attitudes and skills for self-regulated learning. *ReCALL*, *24*(2), 169-187.

Kristmanson, P., Lafargue, C., & Culligan, K. (2013). Experiences with autonomy: Learners' voices on language learning. *Canadian Modern Language Review*, *69* (4), 462-486.

Laufer, B. (1997). What's in a word that makes it hard or easy: Some intralexical factors that affect the learning of words. In N. Schmitt & M. McCarthy (Eds.), *Vocabulary: Description, acquisition, and pedagogy* (pp. 140-155). Cambridge: Cambridge University Press.

Levy, M. (1991). Theory-driven call and the development process. *Computer Assisted Language Learning, 10*(1), 41-56.

Lewis, M. (1997). Pedagogical implications of the lexical approach. In J. Coady & T. Huckin (Eds.), *Second language vocabulary acquisition: A rationale for pedagogy* (pp. 255-270). NY: Cambridge University Press.

Littlewood, W. T., & Liu, N. F. (1996). *Hong Kong students and their English*. Hong Kong: Macmillan.

Long, M. (1983). Does second language instruction make a difference? A review of the research. *TESOL Quarterly*, *17*(3), 359-382.

Lu, M. (2008). Effectiveness of vocabulary learning via mobile phone. *Journal of Computer Assisted Learning, 24*(6), 515-525.

Nation, P. (2005). Teaching and learning vocabulary. In. E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp. 581-595). Mahwah, N J: Lawrence Erlbaum Associates.

McVeigh, J., & Bixby, J. (2015). *Q: Skills for Success 2*: *Reading and writing*. NY: Oxford University.

Nation, P., & Waring, R. (1997). Vocabulary size, text coverage and word lists. In N. Schmitt & M. McCarthy (Eds.), *Vocabulary: Description, acquisition, and pedagogy* (pp. 6-19). Cambridge: Cambridge University Press.

Milton, J., & Meara, P. (1995). How periods abroad affect vocabulary growth in a foreign language. *ITL review of Applied Linguistics, 107*(1), 17-34.

Nunan, D. (1989). *Understanding language classrooms*. London: Prentice Hall.

Nunan, D. (1991). *Language teaching methodology*. London: Prentice Hall.

O'Malley, J. M., & Chamot, A. U. (1990). *Learning strategies in second language acquisition.* Cambridge: Cambridge University Press.

Oskarsson, M. (1984). *Self-assessment of foreign language skills: A survey of research and development work*. Strasbourg, France: Council for Cultural Cooperation (ERIC Document Reproduction Service No. ED 256 172).

Oxford, R. (1990). *Language learning strategies: What every teacher should know*. NY:

Newbury House.

Palomo-Duarte, M., Berns, A., Cejas, A., Dodero, J. M., Caballero, J. A., & Ruiz-Rube, I. (2016). Assessing foreign language learning through mobile game-based learning environments. *International Journal of Human Capital and Information Technology Professionals*, *7*(2), 53-67.

Park, J. Y., & Shin, S-K. (2014). Effects of the smart-phone game types on vocabulary learning and the attitude of Korean college students. *Foreign Languages Education, 2*(4), 149-172.

Pickard, N. (1995). Out- of class language learning strategies: Three case studies. *Language Learning Journal, 12*(1)*,* 35-37.

Ross, S. (1998). Self-assessment in second language testing: A meta-analysis and analysis of experiential factors. *Language Testing, 15*(1), 1-20.

Read, J. (2000). *Assessing vocabulary.* Cambridge: Cambridge University Press.

Reeves, N. B. R. (1993). *The efficacy of home and distance language learning: The OLLO experiment*. Paper presented to the BAAL Annual Conference, University of Salford, Greater Manchester, United Kingdom.

Rubin, J. (2001). Language learner self-management. *Journal of Asian Pacific Communication, 11*(1), 25-37.

Saito, Y. (2003). The use of self-assessment in second language assessment. *TESOL Web Journal, 3*(1), 1-4. Retrieved from December 11, 2018, from the World Wide Web: https://tesol-dev.journals.cdrs.columbia.edu/wpontent/uploads/sites/12/ 2015/05/3.3-Saito-2003.pdf.

Sanaoui, R. (1995). Adult learners' approaches to learning vocabulary in second languages. *The Modern Language Journal, 79* (1), 15-28.

Thornton, P., & Houser, C. (2005). Using mobile phones in English education in Japan. *Journal of Computer Assisted Learning*, *21*(3), 217-228.

Tuan, L. T. (2011). An empirical research on self-learning vocabulary. *Theory and Practice in Language Studies, 1*(12), 1688-1695. Retrieved from November, 1, 2018, from the World Wide Web: http://www.academypublication.com/issues/ past/tpls/vol0112/03.pdf.

Ward, C., & Gramer, M. F., (2015). *Q: Skills for Success 3*: *Reading and writing*. NY: Oxford University.

Wenden, A., & Rubin, J. (Eds.). (1987). *Learner strategies in language learning*. Englewood Cliffs, NJ: Prentice Hall.

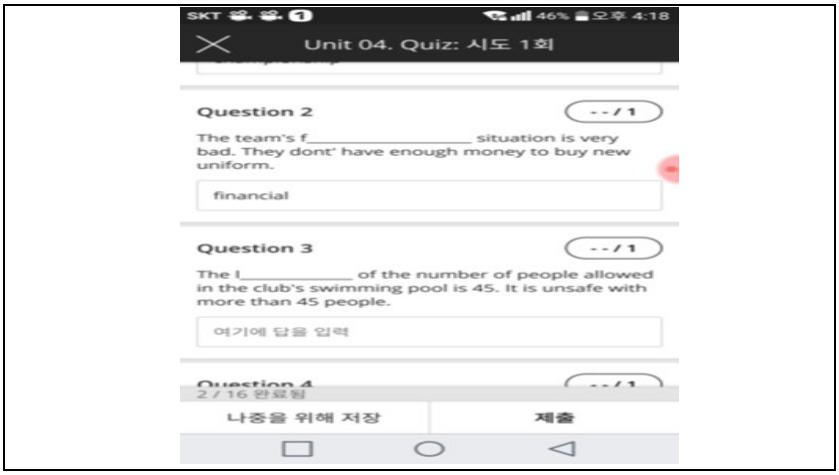
Whattananarong, K. (2004, September). An experiment in the use of mobile phones for testing at King Mongkut's Institute of Technology North Bangkok, Thailand. In Proc. *International Conference on Making Education Reform Happen: Learning from the Asian Experience & Comparative Perspectives*, Bangkok, Thailand. Retrieved from October, 2, 2018, from the World Wide Web:

http://www.retrac.seameo.org/vl/krismant/mobile04.pdf.

White, C. (1995). Autonomy and strategy use in distance foreign language learning: Research findings. *System, 23*(2), 207-221.

APPENDIX 1

The Screen of the Mobile Self-managed Vocabulary Quiz (Intermediate level)



Examples in: English
Applicable Language: English
Applicable Level: Tertiary

Hyun Il-Sun
Faculty of Liberal Arts & Sciences
Hansung University
Samseongyoro-16 Gil
Seongbuk-Gu, 136-792, Korea
Email: astella77@gmail.com

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